

CONFIDENTIAL

Submit 1 Copy To Appropriate District Office
District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised August 1, 2011

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

WELL API NO. 30-043-21125
5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name Lybrook 132-2306
8. Well Number 02H
9. OGRID Number 282327
10. Pool name or Wildcat Lybrook Gallup

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well Gas Well Other

2. Name of Operator
Encana Oil & Gas (USA) Inc.

3. Address of Operator
370 17th Street, Suite 1700 Denver, CO 80202

4. Well Location
SHL: Unit Letter I: 1298 feet from the SOUTH line and 358 feet from the EAST line
BHL: Unit Letter M: 400 feet from the SOUTH line and 330 feet from the WEST line
Section 32 Township 23N Range 6W NMPM Sandoval County

11. Elevation (Show whether DR, RKB, RT, GR, etc.)

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

- PERFORM REMEDIAL WORK
- TEMPORARILY ABANDON
- PULL OR ALTER CASING
- DOWNHOLE COMMINGLE
- PLUG AND ABANDON
- CHANGE PLANS
- MULTIPLE COMPL

OTHER:

SUBSEQUENT REPORT OF:

- REMEDIAL WORK
- COMMENCE DRILLING OPNS.
- CASING/CEMENT JOB
- ALTERING CASING
- P AND A

OTHER:

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Encana Oil & Gas (USA) Inc. (Encana) would like to revise the BHL from 600' FSL and 330' FWL to 400' FSL and 330' FWL, intermediate casing setting depth from 5759'MD to 5753'MD, kick off point from 4700'TVD to 4715'TVD, production liner setting depth from 5559-10005' MD to 5553-10265' MD for the Lybrook 132-2306 02H well. Please see attached revised APD form. The wellbore diagram, C-102 and directional plan were submitted previously on 2/22/13.

RCVD MAR 4 '13
OIL CONS. DIV.
DIST. 3

Hold C104 for Directional Survey and "As Drilled" plat

Hold C104 for Directional Survey and "As Drilled" plat

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Robynn Haden TITLE Engineering Technologist

DATE 2/28/13

Type or print name Robynn Haden
For State Use Only

E-mail address: robynn.haden@encana.com PHONE: 720-876-3941

APPROVED BY: Walt J. Hagan TITLE Deputy Oil & Gas Inspector, District #3

DATE MAR 22 2013

Conditions of Approval (if any):

AV

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

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811 S. First Street, Artesia, NM 88210
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District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Drive
Santa Fe, NM 87505

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-043-21125		² Pool Code 42289	³ Pool Name LYBROOK GALLUP
⁴ Property Code 39270	⁵ Property Name LYBROOK I32-2306		⁶ Well Number 02H
⁷ OGRID No. 282327	⁸ Operator Name ENCANA OIL & GAS (USA) INC.		⁹ Elevation 7103'

¹⁰Surface Location

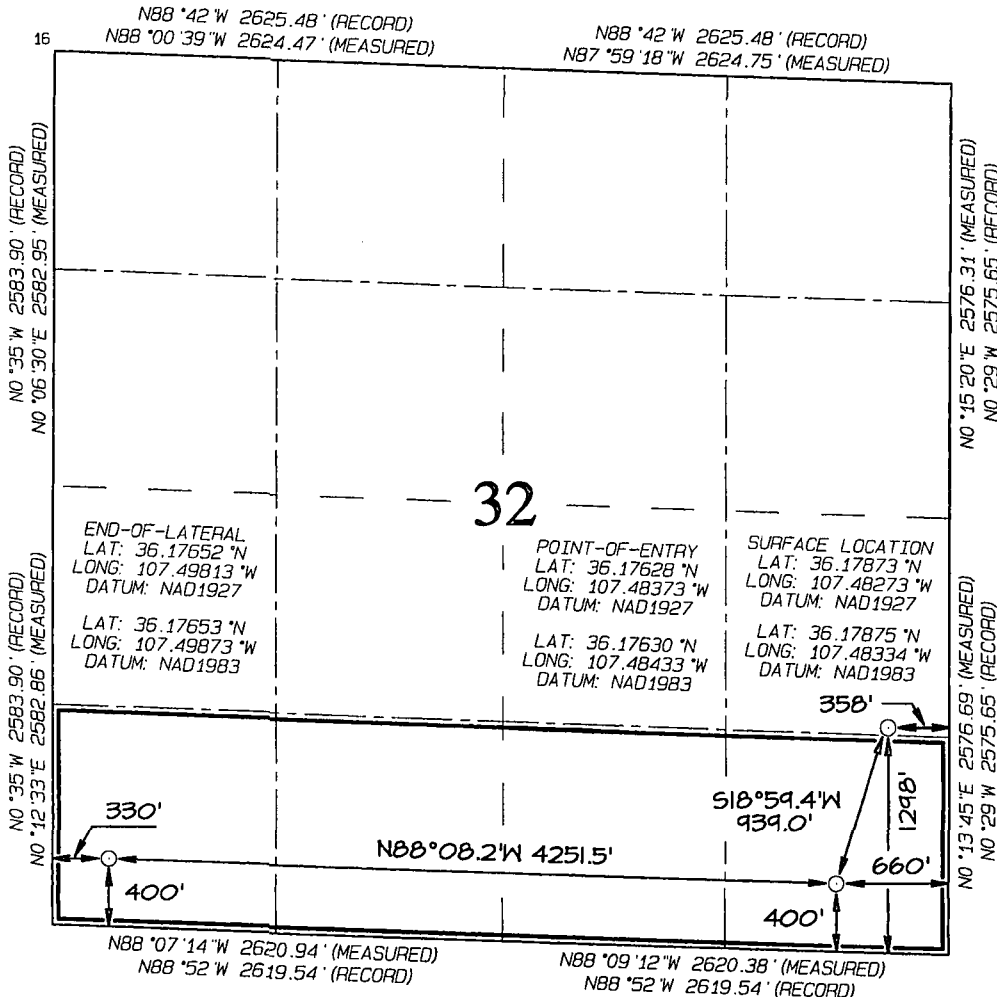
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	32	23N	6W		1298	SOUTH	358	EAST	SANDOVAL

¹¹Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	32	23N	6W		400	SOUTH	330	WEST	SANDOVAL

¹² Dedicated Acres 160.0 Acres - (S/2 S/2)	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. RCVD MAR 11 '13
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION OIL CONS. DIV.
DIST. 3



¹⁷ OPERATOR CERTIFICATION
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Robynn Haden 3/7/13
Signature Date

Robynn Haden
Printed Name
robynn.haden@encana.com
E-mail Address

¹⁸ SURVEYOR CERTIFICATION
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date Revised: FEBRUARY 7, 2013
Date of Survey: MARCH 30, 2012

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
REGISTERED PROFESSIONAL SURVEYOR
15269

JASON C. EDWARDS
Certificate Number 15269

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State of New Mexico

Form C-101
Revised August 1, 2011

Energy Minerals and Natural Resources

Permit

Oil Conservation Division

1220 South St. Francis Dr.

Santa Fe, NM 87505

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address ENCANA OIL & GAS (USA) INC. 370 17 TH STREET, SUITE 1700 DENVER, CO 80202		² OGRID Number 282327
		³ API Number 30-043-21125
⁴ Property Code 39270	⁵ Property Name LYBROOK 132-2306	⁶ Well No. 02H

⁷ Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
SHL: I	32	23N	6W		1298	SOUTH	358	EAST	SANDOVAL
BHL: M	32	23N	6W		400	SOUTH	330	WEST	SANDOVAL

⁸ Pool Information

RCVD MAR 6 '13

LYBROOK GALLUP	OIL CONS. DIV.
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Additional Well Information

DIST 3

⁹ Work Type N	¹⁰ Well Type O	¹¹ Cable/Rotary R	¹² Lease Type S	¹³ Ground Level Elevation 7103'	
¹⁴ Multiple N/A	¹⁵ Proposed Depth 5444' TVD/10265' MD	¹⁶ Formation GALLUP	¹⁷ Contractor AZTEC	¹⁸ Spud Date ~04/07/13	
Depth to Ground water	UNKNOWN	Distance from nearest fresh water well	UNKNOWN WELL TYPE WITHIN 528'	Distance to nearest surface water	~660' (dry)

¹⁹ Proposed Casing and Cement Program

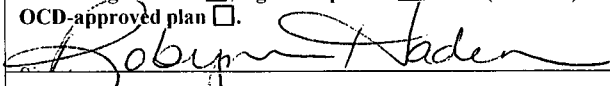
Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
CONDUCTOR	30"	20"	94#	60'	100	SURFACE
SURFACE	12 1/4"	9 5/8"	36#	500'	178	SURFACE
INTERMEDIATE	8 3/4"	7"	26#	5753'MD/5374'TVD	583 (30% OH EXCESS)	SURFACE
PROD. LINER	6 1/8"	4 1/2"	11.6#	5553'-10265' MD	N/A	N/A

Casing/Cement Program: Additional Comments

HORIZONTAL LATERAL IN THE GALLUP FORMATION. NO CEMENT IN THE PRODUCTION LINER, WILL RUN EXTERNAL SWELL CASING PACKER SYSTEM. WILL USE OIL BASED MUD SYSTEM FROM INTERMEDIATE CASING POINT TO TD OF HORIZONTAL LATERAL.

Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
ROTATING HEAD	3000	1500	TBD
SINGLE RAM	3000	3000	TBD
ANNULAR	3000	1500	TBD

I hereby certify that the information given above is true and complete to the best of my knowledge and belief. NO DRILLING PIT WILL BE USED. I further certify that the drilling pit will be constructed according to NMOCD guidelines <input type="checkbox"/> , a general permit <input type="checkbox"/> , or an (attached) alternative OCD-approved plan <input type="checkbox"/> .  Printed name: Robynn Haden Title: Engineering Technologist E-mail Address: robynn.haden@encana.com Date: 3/4/13 Phone: 720-876-3941	OIL CONSERVATION DIVISION	
	Approved By:	
	Title:	
	Approved Date:	Expiration Date:
	Conditions of Approval Attached	

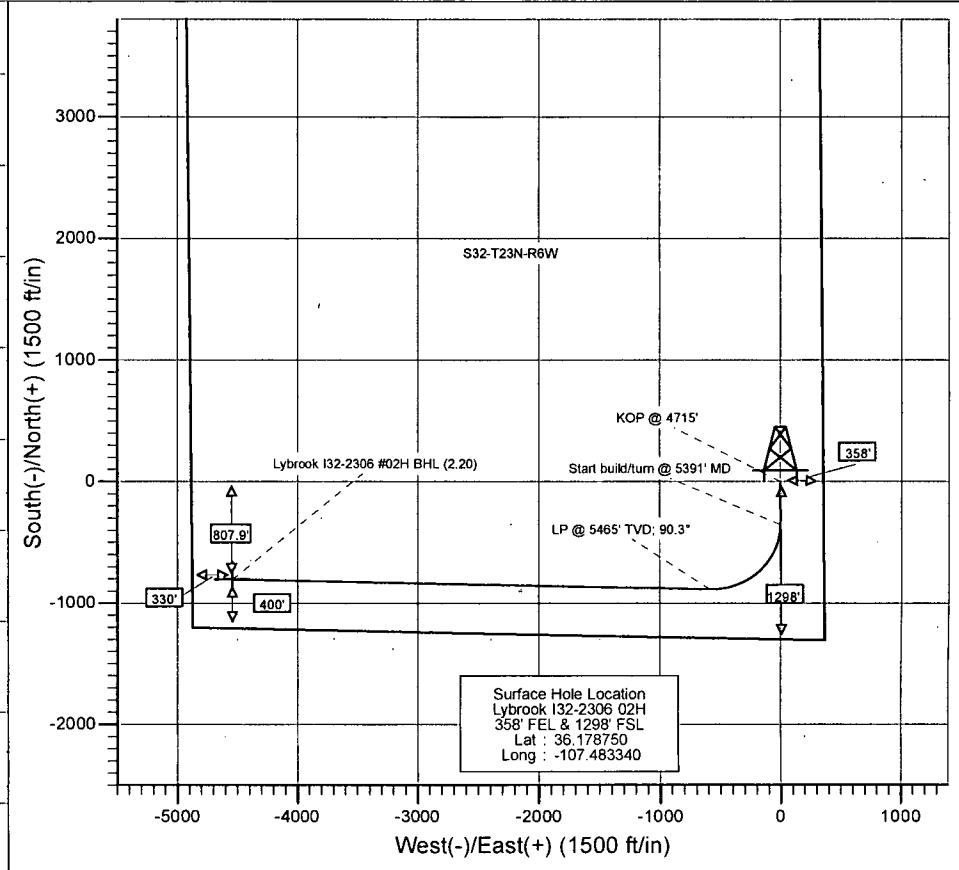
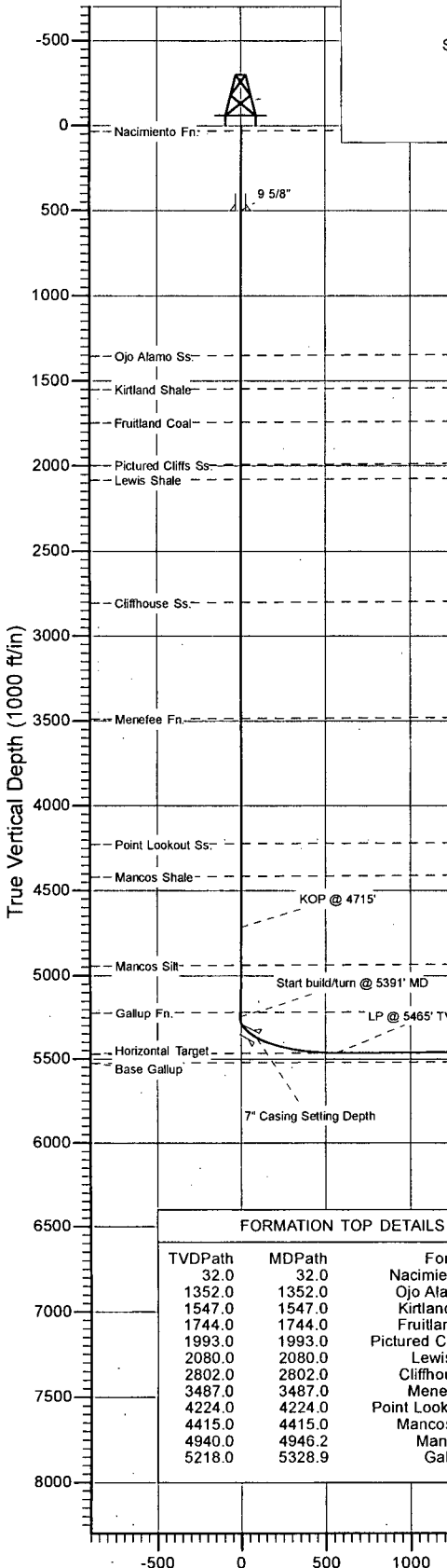
MWD LWD		OPEN HOLE LOGGING	FORM	DEPTH		HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION
				TVD	MD				
				60	60'	30	20" 94# 100sx Type I Neat 48.8ppg cmt	Fresh wtr 8.3-9.2	
Surveys After csg is run		None		500	500	12 1/4	9 5/8" 36ppf J55 STC TOC @ surface 178 sks Type III Cmt	Fresh wtr 8.4-8.6	Vertical <1°
Surveys every 500'		No OH logs Mud logger onsite	Ojo Alamo Kirtland Shale Fruitland Coal Pictured Cliffs Ss Lewis Shale Cliffhouse Ss Menefee Fn Point Lookout Ss Mancos Sh KICK OFF PT Mancos Silt Gallup Top	1352 1547 1744 1993 2080 2802 3487 4224 4415 4715 4940 5218 5374	5753	8 3/4	7" 26ppf J55 LTC Stage tool @ 2040' TOC @ surface 30% OH excess: 583 sks Total Stage 1 Lead: 238 sks Stage 1 Tail: 164 sks Stage 2 Lead: 180 sks	Fresh Wtr 8.5-8.8	Vertical <1° KOP 4715 10 deg/100'
Surveys every 500' Gyro at CP MWD Gamma Directional		No OH Logs	horz target Base Gallup	5465	6305	6 1/8	200' overlap at liner top 3960' Lateral 4 1/2" 11.6ppf SB80 LTC Running external swellable csg packers for isolation of prod string Plan on setting top packer within 100' of intermediate casing shoe	8.6-9.0 OBM OBM 8.6-9.0	.25deg updip TD = 10265' MD 5444' TVD

NOTES:

- 1) Drill with 30" bit to 60', set 20" 94# conductor pipe
- 2) Drill surface to 500', R&C 9 5/8" casing
- 3) N/U BOP and surface equipment
- 4) Drill to KOP of 4715', 8 3/4" hole size,
- 5) PU directional tools and start curve at 10deg/100' build rate
- 6) Drill to casing point of 5753' MD
- 7) R&C 7" casing, circ cmt to surface, switch to OBM
- 8) Land at 90deg, drill 3960' lateral to 10,265', run 4 1/2" liner with external swellable csg packers

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	4715.0	0.00	0.00	4715.0	0.0	0.0	0.00	0.00	0.0	
3	5391.7	67.65	179.80	5245.0	-355.2	1.2	10.00	179.80	-8.2	
4	6305.3	90.30	271.13	5465.0	-886.2	-583.5	10.00	90.23	565.9	
5	10265.3	90.30	271.13	5444.3	-807.9	-4542.6	0.00	0.00	4525.8	Lybrook 132-2306 #02H BHL (2.20)

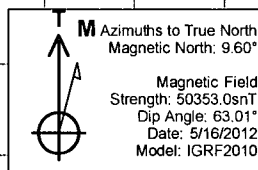


DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Lybrook 132-2306 #02H BHL (2.20)	-807.9	-4542.6	1885897.07	1271882.78	36.176530	-107.488730

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
32.0	32.0	Nacimiento Fn.
1352.0	1352.0	Ojo Alamo Ss.
1547.0	1547.0	Kirtland Shale
1744.0	1744.0	Fruitland Coal
1993.0	1993.0	Pictured Cliffs Ss.
2080.0	2080.0	Lewis Shale
2802.0	2802.0	Cliffhouse Ss.
3487.0	3487.0	Menefee Fn.
4224.0	4224.0	Point Lookout Ss.
4415.0	4415.0	Mancos Shale
4940.0	4946.2	Mancos Silt
5218.0	5328.9	Gallup Fn.



Plan #4
 Lybrook 132-2306 02H
 12XXXX: DN
 KBE @ 7115.0ft (Aztec 222)
 Ground Elevation @ 7102.0
 North American Datum 1983
 Well Lybrook 132-2306 02H, True North

Vertical Section at 271.13° (1000 ft/in)

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook I32-2306 02H
Wellbore: HZ
Design: Plan #4

Local Co-ordinate Reference: Well Lybrook I32-2306 02H
TVD Reference: KBE @ 7115.0ft (Aztec 222)
MD Reference: KBE @ 7115.0ft (Aztec 222)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	Sandoval County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site	Lybrook				
Site Position:		Northing:	1,882,676.45 ft	Latitude:	36.168210
From:	Lat/Long	Easting:	1,287,068.90 ft	Longitude:	-107.447150
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-0.71 °

Well	Lybrook I32-2306 02H					
Well Position	+N-S	0.0 ft	Northing:	1,886,647.14 ft	Latitude:	36.178750
	+E-W	0.0 ft	Easting:	1,276,435.31 ft	Longitude:	-107.483340
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,102.0 ft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2010	5/16/2012	(°)	(°)	(nT)
			9.60	63.01	50,353

Design	Plan #4			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	271.13

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,715.0	0.00	0.00	4,715.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,391.7	67.65	179.80	5,245.0	-355.2	1.2	10.00	10.00	0.00	179.80	
6,305.3	90.30	271.13	5,465.0	-886.2	-583.5	10.00	2.48	10.00	90.23	
10,265.3	90.30	271.13	5,444.3	-807.9	-4,542.6	0.00	0.00	0.00	0.00	Lybrook I32-2306 #02

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook I32-2306 02H
Wellbore: HZ
Design: Plan #4

Local Co-ordinate Reference: Well Lybrook I32-2306 02H
TVD Reference: KBE @ 7115.0ft (Aztec 222)
MD Reference: KBE @ 7115.0ft (Aztec 222)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
32.0	0.00	0.00	32.0	0.0	0.0	0.0	0.00	0.00	Nacimiento Fn.
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	9 5/8"
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	
1,352.0	0.00	0.00	1,352.0	0.0	0.0	0.0	0.00	0.00	Ojo Alamo Ss.
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,547.0	0.00	0.00	1,547.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,744.0	0.00	0.00	1,744.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
1,993.0	0.00	0.00	1,993.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	
2,080.0	0.00	0.00	2,080.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	
2,802.0	0.00	0.00	2,802.0	0.0	0.0	0.0	0.00	0.00	Cliffhouse Ss.
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	
3,487.0	0.00	0.00	3,487.0	0.0	0.0	0.0	0.00	0.00	Menefee Fn.
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	
4,224.0	0.00	0.00	4,224.0	0.0	0.0	0.0	0.00	0.00	Point Lookout Ss.

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook I32-2306 02H
Wellbore: HZ
Design: Plan #4

Local Co-ordinate Reference: Well Lybrook I32-2306 02H
TVD Reference: KBE @ 7115.0ft (Aztec 222)
MD Reference: KBE @ 7115.0ft (Aztec 222)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	
4,415.0	0.00	0.00	4,415.0	0.0	0.0	0.0	0.00	0.00	Mancos Shale
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	
4,715.0	0.00	0.00	4,715.0	0.0	0.0	0.0	0.00	0.00	KOP @ 4715'
4,800.0	8.50	179.80	4,799.7	-6.3	0.0	-0.1	10.00	10.00	
4,900.0	18.50	179.80	4,896.8	-29.6	0.1	-0.7	10.00	10.00	
4,946.2	23.12	179.80	4,940.0	-46.0	0.2	-1.1	10.00	10.00	Mancos Silt
5,000.0	28.49	179.80	4,988.4	-69.4	0.2	-1.6	10.00	10.00	
5,100.0	38.49	179.80	5,071.7	-124.5	0.4	-2.9	10.00	10.00	
5,200.0	48.49	179.80	5,144.1	-193.3	0.7	-4.5	10.00	10.00	
5,300.0	58.49	179.80	5,203.6	-273.5	0.9	-6.3	10.00	10.00	
5,328.9	61.38	179.80	5,218.0	-298.5	1.0	-6.9	10.00	10.00	Gallup Fn.
5,391.7	67.65	179.80	5,245.0	-355.2	1.2	-8.2	10.00	10.00	Start build/turn @ 5391' MD
5,400.0	67.65	180.70	5,248.2	-362.9	1.2	-8.4	10.01	-0.01	
5,500.0	68.03	191.49	5,286.0	-454.8	-8.6	-0.3	10.00	0.38	
5,600.0	69.10	202.17	5,322.7	-543.7	-35.6	24.8	10.00	1.07	
5,700.0	70.83	212.66	5,357.0	-626.9	-78.8	66.4	10.00	1.73	
5,753.4	71.99	218.16	5,374.0	-668.2	-108.1	94.9	10.00	2.18	7" Casing Setting Depth
5,800.0	73.13	222.89	5,388.0	-702.0	-137.0	123.1	10.00	2.45	
5,900.0	75.93	232.85	5,414.7	-766.5	-208.4	193.3	10.00	2.80	
6,000.0	79.13	242.56	5,436.4	-818.5	-290.9	274.7	10.00	3.20	
6,100.0	82.62	252.05	5,452.3	-856.5	-381.8	364.9	10.00	3.49	
6,200.0	86.31	261.38	5,461.9	-879.3	-478.6	461.2	10.00	3.69	
6,300.0	90.10	270.64	5,465.1	-886.3	-578.2	560.6	10.00	3.79	
6,305.3	90.30	271.13	5,465.0	-886.2	-583.4	565.8	10.00	3.80	LP @ 5465' TVD; 90.3°
6,400.0	90.30	271.13	5,464.5	-884.3	-678.1	660.6	0.00	0.00	
6,500.0	90.30	271.13	5,464.0	-882.3	-778.1	760.6	0.00	0.00	
6,600.0	90.30	271.13	5,463.5	-880.4	-878.1	860.6	0.00	0.00	
6,700.0	90.30	271.13	5,463.0	-878.4	-978.1	960.6	0.00	0.00	
6,800.0	90.30	271.13	5,462.4	-876.4	-1,078.1	1,060.6	0.00	0.00	
6,900.0	90.30	271.13	5,461.9	-874.4	-1,178.0	1,160.6	0.00	0.00	
7,000.0	90.30	271.13	5,461.4	-872.4	-1,278.0	1,260.6	0.00	0.00	
7,100.0	90.30	271.13	5,460.9	-870.5	-1,378.0	1,360.6	0.00	0.00	
7,200.0	90.30	271.13	5,460.3	-868.5	-1,478.0	1,460.6	0.00	0.00	
7,300.0	90.30	271.13	5,459.8	-866.5	-1,578.0	1,560.6	0.00	0.00	
7,400.0	90.30	271.13	5,459.3	-864.5	-1,677.9	1,660.6	0.00	0.00	
7,500.0	90.30	271.13	5,458.8	-862.6	-1,777.9	1,760.6	0.00	0.00	
7,600.0	90.30	271.13	5,458.3	-860.6	-1,877.9	1,860.6	0.00	0.00	
7,700.0	90.30	271.13	5,457.7	-858.6	-1,977.9	1,960.6	0.00	0.00	
7,800.0	90.30	271.13	5,457.2	-856.6	-2,077.9	2,060.6	0.00	0.00	
7,900.0	90.30	271.13	5,456.7	-854.6	-2,177.8	2,160.6	0.00	0.00	
8,000.0	90.30	271.13	5,456.2	-852.7	-2,277.8	2,260.6	0.00	0.00	
8,100.0	90.30	271.13	5,455.6	-850.7	-2,377.8	2,360.6	0.00	0.00	
8,200.0	90.30	271.13	5,455.1	-848.7	-2,477.8	2,460.6	0.00	0.00	
8,300.0	90.30	271.13	5,454.6	-846.7	-2,577.8	2,560.6	0.00	0.00	
8,400.0	90.30	271.13	5,454.1	-844.8	-2,677.7	2,660.6	0.00	0.00	
8,500.0	90.30	271.13	5,453.5	-842.8	-2,777.7	2,760.5	0.00	0.00	
8,600.0	90.30	271.13	5,453.0	-840.8	-2,877.7	2,860.5	0.00	0.00	
8,700.0	90.30	271.13	5,452.5	-838.8	-2,977.7	2,960.5	0.00	0.00	

Planning Report

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 Design: Plan #4

Local Co-ordinate Reference: Well Lybrook I32-2306 02H
 TVD Reference: KBE @ 7115.0ft (Aztec 222)
 MD Reference: KBE @ 7115.0ft (Aztec 222)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
8,800.0	90.30	271.13	5,452.0	-836.8	-3,077.6	3,060.5	0.00	0.00	
8,900.0	90.30	271.13	5,451.4	-834.9	-3,177.6	3,160.5	0.00	0.00	
9,000.0	90.30	271.13	5,450.9	-832.9	-3,277.6	3,260.5	0.00	0.00	
9,100.0	90.30	271.13	5,450.4	-830.9	-3,377.6	3,360.5	0.00	0.00	
9,200.0	90.30	271.13	5,449.9	-828.9	-3,477.6	3,460.5	0.00	0.00	
9,300.0	90.30	271.13	5,449.4	-827.0	-3,577.5	3,560.5	0.00	0.00	
9,400.0	90.30	271.13	5,448.8	-825.0	-3,677.5	3,660.5	0.00	0.00	
9,500.0	90.30	271.13	5,448.3	-823.0	-3,777.5	3,760.5	0.00	0.00	
9,600.0	90.30	271.13	5,447.8	-821.0	-3,877.5	3,860.5	0.00	0.00	
9,700.0	90.30	271.13	5,447.3	-819.0	-3,977.5	3,960.5	0.00	0.00	
9,800.0	90.30	271.13	5,446.7	-817.1	-4,077.4	4,060.5	0.00	0.00	
9,900.0	90.30	271.13	5,446.2	-815.1	-4,177.4	4,160.5	0.00	0.00	
10,000.0	90.30	271.13	5,445.7	-813.1	-4,277.4	4,260.5	0.00	0.00	
10,100.0	90.30	271.13	5,445.2	-811.1	-4,377.4	4,360.5	0.00	0.00	
10,200.0	90.30	271.13	5,444.6	-809.2	-4,477.4	4,460.5	0.00	0.00	
10,265.3	90.30	271.13	5,444.3	-807.9	-4,542.6	4,525.8	0.00	0.00	TD at 10265.3

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Lybrook I32-2306 #02H - hit/miss target - Shape - Point	0.00	0.00	5,443.3	-549.4	-4,545.5	1,886,155.58	1,271,883.16	36.177240	-107.498740
- plan misses target center by 258.5ft at 10265.3ft MD (5444.3 TVD, -807.9 N, -4542.6 E)									
Lybrook I32-2306 #02H - plan misses target center by 65.5ft at 6030.3ft MD (5441.8 TVD, -831.6 N, -317.7 E) - Point	0.00	0.00	5,443.3	-891.9	-292.2	1,885,758.97	1,276,131.79	36.176300	-107.484330
Lybrook I32-2306 #02H - plan hits target center - Point	0.00	0.00	5,444.3	-807.9	-4,542.6	1,885,897.07	1,271,882.78	36.176530	-107.498730

500.0	500.0	9 5/8"	0.000	0.000
5,753.4	5,374.0	7" Casing Setting Depth	0.000	0.000

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MD Reference: KBE @ 7115.0ft (Aztec 222)
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Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
32.0	32.0	Nacimiento Fn.		-0.30	271.13
1,352.0	1,352.0	Ojo Alamo Ss.		-0.30	271.13
1,547.0	1,547.0	Kirtland Shale		-0.30	271.13
1,744.0	1,744.0	Fruitland Coal		-0.30	271.13
1,993.0	1,993.0	Pictured Cliffs Ss.		-0.30	271.13
2,080.0	2,080.0	Lewis Shale		-0.30	271.13
2,802.0	2,802.0	Cliffhouse Ss.		-0.30	271.13
3,487.0	3,487.0	Menefee Fn.		-0.30	271.13
4,224.0	4,224.0	Point Lookout Ss.		-0.30	271.13
4,415.0	4,415.0	Mancos Shale		-0.30	271.13
4,946.2	4,940.0	Mancos Silt		-0.30	271.13
5,328.9	5,218.0	Gallup Fn.		-0.30	271.13

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
4,715.0	4,715.0	0.0	0.0	KOP @ 4715'
5,391.7	5,245.0	-355.2	1.2	Start build/turn @ 5391' MD
6,305.3	5,465.0	-886.2	-583.4	LP @ 5465' TVD; 90.3°
10,265.3	5,444.3	-807.9	-4,542.6	TD at 10265.3